CLAIM AMENDMENTS

1. (Currently amended) ~~Apparatus~~ An apparatus for locating an emitter of electromagnetic waves ~~by means of~~ comprising:

a plurality of receivers, each ~~receiver~~ of said receivers including means for detecting ~~the~~ a time of arrival of said electromagnetic waves at said receiver, ~~and~~

means for ~~computing the~~ determining respective relative time differences of arrival of said electromagnetic waves between said receivers and for estimating ~~therefrom the~~ from the respective relative time differences a position of the emitter, and ~~including~~

correcting means for correcting said detected times of arrival for path length discrepancies caused by the ~~earth's~~ atmosphere,

wherein each of said receivers is mounted on a respective airborne platform.

2. (Currently amended) ~~Apparatus~~ The apparatus according to claim 1, wherein the correcting means corrects for discrepancies that are caused by atmospheric refraction.

3. (Currently amended) ~~Apparatus~~ The apparatus according to claim 1, wherein ~~each said receiver is mounted on a respective airborne platform, and~~ at least three pairs of said receivers are provided.

4. (Currently amended) ~~Apparatus~~ The apparatus according to claim 3, wherein said correcting means is arranged to: ~~carry out the following steps:~~

a) measure electromagnetic wave arrival time differences ~~of arrival~~ between pairs of said receivers, **[[;]]**

b) assuming straight-line paths, obtain an estimate of emitter position, **[[;]]**

c) for each receiver, **[[:]]** using said estimate, obtain ~~the~~ a ground range from said emitter to ~~a receiving platform~~ that receiver, **[[;]]**

d) ~~using~~ use said ground range, ~~and known~~ a receiver height, and an assumed refractive profile in a selected ray-tracing integral equation to predict actual path length, **[[;]]**

e) obtain ~~the~~ a path length difference between ~~said~~ a predicted actual path length and the straight-line path ~~obtained from the estimated emitter position~~ length to form a correction to each of said ~~time differences of~~ electromagnetic wave arrival ~~in Step a); f) return to Step b); g) Continue until the corrections in Step e) converge~~ times, and

f) repeatedly obtain said estimate of emitter position, obtain said ground range, predict said actual path length, and obtain said path length difference until said path length difference converges to a certain value.

5. (Currently amended) ~~Apparatus~~ The apparatus according to claim 1, wherein[[,]] said correcting means is arranged to ~~perform the following~~ determine said predicted actual path length R from a ray tracing equation [[.]]

$$R = \int_{h_0}^{h_1} \frac{n(h)}{\sqrt{1 - \left[\frac{n_0 \cos(\theta_0)}{n(h)\left[1 + \frac{h}{re}\right]}\right]^2}} . dh ,$$

where ~~R is the path length,~~ n(h) describes the atmospheric refractive profile as a function of height, n_0 is the refractive index at the earth surface, θ_0 is the take-off angle of the ray at the emitter, h_0 and h_1 are the start and end heights of the path, and re is the earth radius.

6. (Currently amended) ~~Apparatus~~ The apparatus according to ~~any~~ claim 5, including a Kalman filter for improving ~~said~~ correction of said detected times.

7. (Currently amended) A method for locating an emitter of electromagnetic waves by ~~means~~ way of ~~a plurality of receivers~~ the apparatus according to claim 1, comprising detecting the times of arrival of said electromagnetic waves, determining ~~at said receivers, computing~~ the respective relative time differences ~~of arrival between said receivers~~ and estimating ~~therefrom~~ from the respective relative time differences the position of the emitter, and correcting said detected times of arrival for said path length discrepancies. ~~caused by the earth's atmosphere.~~

8-17. (Canceled)